

**King Saud University
Pharmacy College
Pharmacology Dept.**

Biochemistry Exam.

284 PHL

2/5/1427 H

Time allowed: 2 hours.

INSTRUCTIONS

- 1] All questions are to be attempted.**
- 2] Check that the examination booklet consists of (7) pages, one of which are
answers sheet**

GOOD LUCK

Question No	Answer	Question No	Answer
1	B	21	B
2	C	22	A
3	B	23	D
4	A	24	C
5	A	25	C
6	A	26	C
7	D	27	C
8	B	28	C
9	D	29	A
10	A	30	A
11	D		
12	D		
13	D		
14	C		
15	A		
16	E		
17	B		
18	E		
19	A		
20	A		

Choose the correct answer (ONE answer) and record your answers in the answer sheet in page 2:

(30 marks)

1- Which of the following is a ketose sugar?

- a) Galactose
- b) Fructose.
- c) Glucose.
- d) Mannose.
- e) Lactose.

2- A homopolysaccharide formed of β -glucose units is

- a) Starch.
- b) Dextrin.
- c) Cellulose.
- d) Cellobiose.
- e) Amylodextrin.

3- Inulin is a polymer of

- a) Glucose.
- b) Fructose.
- c) Mannose.
- d) Galactose.

4- The two sugar units of disaccharides are connected by

- a) O-glycosidic bond.
- b) N-glycosidic bond.
- c) Peptide bond
- d) Phosphodiesterase bond.
- e) Double bond.

5- Glycosaminoglycans:

- a) Contain repeated disaccharide.
- b) Contain no sulfate groups.
- c) Contain branches of N-acetylneuraminic acid.
- d) Contain no uronic acids.

6- Sorbitol is produced by the reduction of:

- a) Glucose or fructose
- b) Glucose or mannose
- c) Glucose or galactose
- d) Galactose or mannose

7- For a compound to be optically active it must be

- a) Colored.
- b) A protein.
- c) Symmetric.
- d) A symmetric.
- e) Plant in nature.

8- Hydrolysis of lactose yields:

- a) Glucose only.
- b) Glucose and galactose.
- c) Glucose and fructose.
- d) Glucose and mannose.
- e) Mannose and fructose.

9- The reference sugar is:

- a) Glucose.
- b) Fructose.
- c) Mannose.
- d) Glyceraldehyde.
- e) Ribulose.

10- Normal value for blood glucose is:

- a) 80-120 mg/dl.
- b) 60-90 mg/dl
- c) 120-140 mg/dl
- d) 170-180 mg/dl
- e) 200-220 mg/dl

11- A fatty acid which is saturated:

- a) Oleic acid.
- b) Lenoleic acid.
- c) Lenolenic acid
- d) Palmitic acid.
- e) Arachidonic acid.

12-Hydrogenation of oleic acid produces:-

- a) lenoleic acid
- b) Lenolenic acid
- c) Arachidonic acid
- d) Stearic acid

13-The followings are essential fatty acids except

- a) lenoleic acid
- b) Lenolenic acid
- c) Arachidonic acid
- d) Oleic acid

14-An unsaturated fatty acid with 4 double bond

- a) oleic acid
- b) Lenolenic acid
- c) Arachidonic acid
- d) Stearic acid

15- Which of the following is not a phospholipid?

- a) Cerebroside
- b) Plasmalogen
- c) Sphingomyelin
- d) Cephalin
- e) lecithin

16-Hydrolysis of lecithin yields the following products except

- a) Saturated fatty acids
- b) Unsaturated fatty acids
- c) Glycerol
- d) Phosphate
- e) Ethanolamine

17-The following phospholipids contain choline except

- a) lecithin
- b) Cephalin
- c) Shingomyelin
- d) All of the above
- e) None of the above

18-The following conjugated lipids contain glycerol Except:-

- a) lecithin
- b) Cephalin
- c) Plasmalogen
- d) Cardiolipin
- e) Cerebroside

19-The following conjugated lipids contain shingosine except:-

- a) Plasmalogen
- b) Kerasin
- c) Nervon
- d) Shingomyelin
- e) Cerebron

20-Which of the following is not a constituent of ganglioside molecule

- a) Glycerol
- b) Sialic acid
- c) Hexose sugar
- d) Sphingosine
- e) Long chain fatty acid

21-Electron transport chain occurs in

- a) Outer mitochondrial membrane
- b) Inner mitochondrial membrane
- c) Golgi apparatus
- d) Lysosomes

22-The outer mitochondrial membrane is

- a) Permeable to most small molecules
- b) Impermeable to all molecules
- c) Selective permeable
- d) All of the above
- e) None of the above

23-Which of the followings are high energy containing compounds

- a) ATP
- b) GTP
- c) UTP
- d) All of the above
- e) None of the above

24-The most important part of high energy containing compounds are

- a) Nitrogenous base
- b) Ribose
- c) phosphoanhydride bond
- d) All of the above
- e) None of the above

25- When a substrate is oxidized via NAD dehydrogenase, the number of ATP moles formed per oxygen is:

- a) 1
- b) 2
- c) 3
- d) 4

26-All members of the respiratory chains are proteins except

- a) NADH dehydrogenase
- b) Flavoproteins dehydrogenase
- c) Co-enzyme Q
- d) Cytochromes

27-Oxidation of extramitochondrial NADH+H is mediated by

- a) Glycerophosphate shuttle
- b) Malate-aspartate shuttle
- c) All of the above

d) None of the above

28-The mechanism of uncouplers of oxidative phosphorylation is

- a) Allow oxidation and phosphorylation
- b) Inhibits oxidation and phosphorylation
- c) Allow oxidation but prevent phosphorylation
- d) Inhibits phosphorylation and allow oxidation

29-Barbiturates are inhibitors of the respiratory chain through

- a) Binding with site I
- b) Binding with site II
- c) Binding with site III
- d) All of the above
- e) None of the above

30-ATP synthase(phosphorylating enzyme complex) is located in

- a) Inner mitochondrial membrane
- b) Outer mitochondrial membrane
- c) Between inner and outer membrane
- d) All of the above
- e) None of the above

61-The hormones are

- a) Organic compounds produced by endocrine system directly into the blood
- b) Organic compounds produced by exocrine system directly into the blood
- c) Organic compounds produced by endocrine system directly into the lymphatic system
- d) All of the above
- e) None of the above

62-The general functions of the hormones are

- a) Regulation of the metabolism
- b) Growth
- c) Homeostasis
- d) All of the above
- e) None of the above

63-The hormones can be classified according to chemical structure into

- a) Amino acid derivative and polypeptides
- b) Proteins and glycoproteins
- c) Steroids
- d) All of the above
- e) None of the above

64-The hormones can be classified according to mechanism of actions into

- a) Hormones bind to intracellular receptors
- b) hormones bind to cell surface receptors
- c) All of the above
- d) None of the above

65-T3 and T4 hormones are

- a) Hormones bind to intracellular receptors
- b) Hydrophilic
- c) Have short half life
- d) All of the above
- e) None of the above

66-The second messengers for the hormones binding to cell surface are

- a) cAMP
- b) cGMP
- c) Calcium or phospholipids
- d) All of the above
- e) None of the above

67-Calmodulin is

- a) Intracellular proteins have 4 calcium binding sites
- b) Intracellular phospholipids has no function
- c) Intracellular nucleotides
- d) All of the above
- e) None of the above

68-The functions of water in the body are

- a) It is the solvent for many ionic compounds
- b) It is important to maintain structural and function of macromolecules
- c) Regulation of body temperature
- d) All of the above
- e) None of the above

69-Total body water is distributed between

- a) Intracellular fluid constituting 2/3 of body water
- b) Extracellular fluids constituting 1/3 of body water
- c) All of the above
- d) None of the above

70-Dehydration may be due to

- a) Pure water loss
- b) Electrolyte loss
- c) All of the above
- d) None of the above

71-The blood pH is normally kept within

- a) 7.37 to 7.43
- b) 7.1 to 7.2
- c) All of the above
- d) None of the above

72-The buffer is

- a) Solution which resist the change in pH when an acid or alkali are added to it
- b) Solution which can not resist the change in pH when an acid or alkali are added to it
- c) Solution which can not neutralize acid
- d) All of the above
- e) None of the above

73-Blood buffers are

- a) Plasma (extracellular) buffer
- b) RBCs buffer
- c) All of the above

d) None of the above

74-Plasma buffers are

- a) Carbonic acid/ bicarbonates buffer
- b) Phosphate buffer
- c) Plasma proteins buffer
- d) All of the above
- e) None of the above

75-RBCs buffers are

- a) Hemoglobin buffer
- b) Oxyhemoglobin buffer
- c) Carbonic acid/ bicarbonates buffer
- d) All of the above
- e) None of the above

76 –Non volatile acids can be buffered by

- a) Plasma carbonic acid/bicarbonates
- b) Hemoglobin buffer
- c) Oxyhemoglobin buffer
- d) All of the above
- e) None of the above

77-The normal ratio of bicarbonate /carbonic acid is

- a) 20/1
- b) 1/20
- c) 1/30
- d) 30/1

78-Acidosis is the state of

- a) Increase hydrogen ion concentration
- b) Increase hydroxyl ion concentration
- c) Increase pH of the blood
- d) All of the above
- e) None of the above

79 –Respiratory acidosis occurs due to

- a) Primary increase in the concentration of carbonic acid content
- b) Primary decrease in the concentration of carbonic acid content
- c) Increased ventilation
- d) All of the above
- e) None of the above

80-Metabolic acidosis occurs due to

- a) Primary increase in the concentration of bicarbonates
- b) Primary decrease in the concentration of bicarbonates
- c) Decreased ventilation
- d) All of the above
- e) None of the above